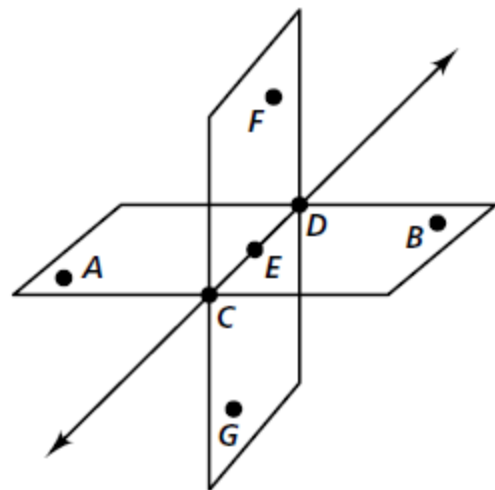


Geometry Midterm Exam Study Guide

1.

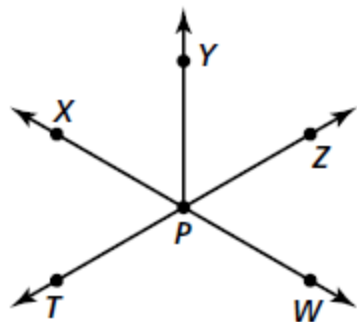
In the diagram below, which point is not coplanar with the points A and B on the plane shown?



- | | | | |
|---|---|---|---|
| F | F | H | D |
| G | E | J | C |

2.

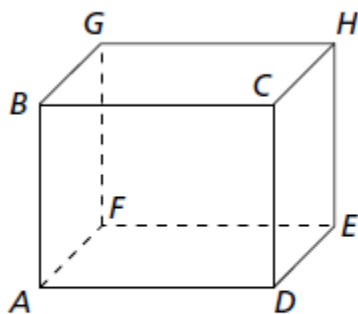
In the figure below, you cannot assume that ?.



- A $\angle XPT$ and $\angle ZPW$ are vertical angles.
 B $m\angle YPW = 110^\circ$.
 C Points T , P , and Z are collinear.
 D \overleftrightarrow{XW} and \overleftrightarrow{TZ} intersect at point P .

3.

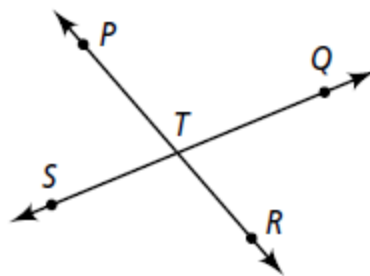
Which group of points is not coplanar?



- | | | | |
|---|--------------|---|--------------|
| A | D, A, F, E | C | F, G, B, A |
| B | E, F, G, H | D | G, B, F, D |

4.

Given the diagram below, which of the following statements is NOT true?



- F \overleftrightarrow{PR} and \overleftrightarrow{SQ} intersect in point T
 G \overrightarrow{PT} and \overrightarrow{TQ} are both rays
 H \overline{ST} and \overline{PR} are both segments
 J \overrightarrow{PT} and \overrightarrow{QT} are opposite rays

5.

$\angle TUV$ and $\angle VUW$ are adjacent complementary angles. If $m\angle TUV = 80^\circ$, what is $m\angle VUW$?

- | | | | |
|---|------------|---|-------------|
| A | 10° | C | 70° |
| B | 90° | D | 170° |

6.

What is the distance between points $A(1, 9)$ and $B(4, -2)$?

- A $\sqrt{58}$ C $\sqrt{130}$
 B 58 D 130

7.

\overline{AB} has endpoints $A(2, 4)$ and $B(8, y)$. If AB is 10, what is the value of y ?

- F 8 H 64
 G 12 J 100

8.

Use the Transitive Property of Congruence to complete the statement. If $\angle M \cong \angle T$ and $\angle T \cong \angle A$, then _____.

- A $\angle M \cong \angle M$ C $\angle M \cong \angle A$
 B $\angle A \cong \angle T$ D $\angle T \cong \angle M$

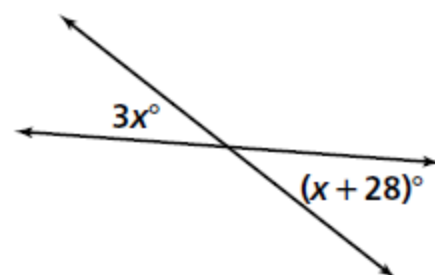
9.

Given that $\angle QRS \cong \angle ABC$, which statement is an example of the Symmetric Property of Congruence?

- F $\angle QRS \cong \angle QRS$ H $\angle QRS \cong \angle ABC$
 G $\angle ABC \cong \angle QRS$ J $\angle ABC \cong \angle ABC$

10.

Find the value of x .

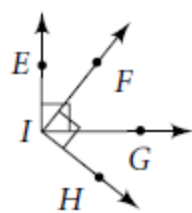


- F $x = 7$ H $x = 9.3$
 G $x = 14$ J $x = 4.7$

11.

Name pairs of congruent angles in the figure.

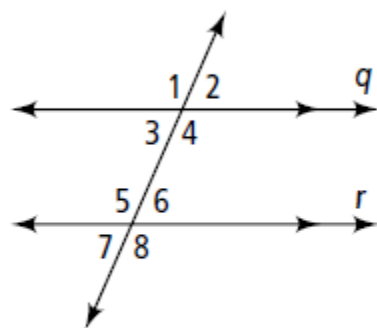
- I. $\angle EIF$ and $\angle GIH$
 II. $\angle GIF$ and $\angle GIH$
 III. $\angle EIF$ and $\angle GIF$
 IV. $\angle EIG$ and $\angle FIH$



- F I and IV H I and II
 G II and III J I only

12.

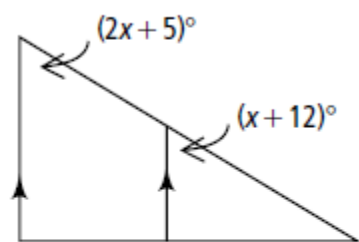
Use the figure below, in which $q \parallel r$. Which of the following could be the measures of $\angle 4$ and $\angle 6$?



- A $m\angle 4 = 60^\circ, m\angle 6 = 60^\circ$
- B $m\angle 4 = 70^\circ, m\angle 6 = 20^\circ$
- C $m\angle 4 = 110^\circ, m\angle 6 = 110^\circ$
- D $m\angle 4 = 160^\circ, m\angle 6 = 20^\circ$

13.

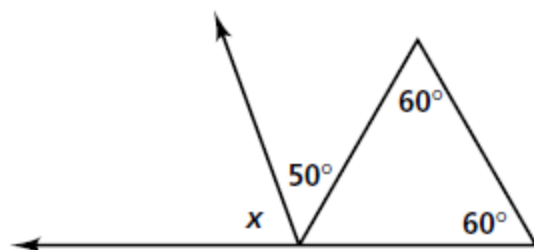
Find the value of x .



- A $x = 3.5$
- B $x = 7$
- C $x = 8.5$
- D $x = 17$

14.

In the diagram below, what is the value of x ?



- | | |
|--------------|--------------|
| F 70° | H 50° |
| G 60° | J 40° |

15.

Which of the following lines is parallel to the line that passes through $(-1, -3)$ and $(5, 0)$?

- A $y = \frac{1}{2}x + 9$
- B $y = -\frac{1}{2}x - 3$
- C $y = 2x + 5$
- D $6x - 3y = -1$

16.

What is the y -intercept of the line that is perpendicular to $y = -3x - 5$ and passes through the point $(-3, 7)$?

- F 23
- G $\frac{1}{3}$
- H 8
- J 10

17.

Complete the congruence statement,
given that quadrilateral $ABCD \cong PQRS$,
 $\overline{AD} \cong \underline{\hspace{1cm}}?$

F \overline{PQ} G \overline{PR} H \overline{PS} J \overline{QR}

18.

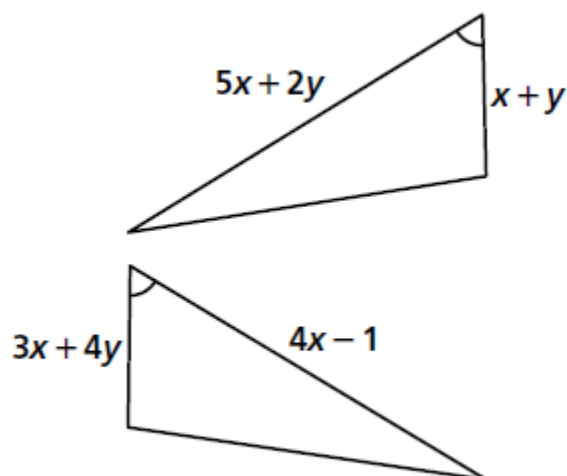
If $MNPQ \cong ABCD$, which of the
following conclusions can you make?

A $\angle NMP \cong \angle BCD$ B $\angle NPQ \cong \angle BCD$ C $\angle PQM \cong \angle BAD$

D none of these

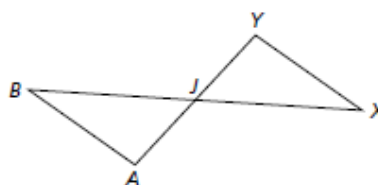
19.

For what values of x and y are the
triangles congruent?

F $x = 2, y = -3$ H $x = 3, y = -2$ G $x = -2, y = 3$ J $x = -3, y = 2$

20.

1. Use the diagram and the information
given to complete the missing element
of the two-column proof.

Given: $\overline{AB} \parallel \overline{XY}$ \overline{AY} bisects \overline{XB} .Prove: $\triangle AJB \cong \triangle YJX$.

Statements

Reasons

1. $\overline{AB} \parallel \overline{XY}$

1. Given

2. $\angle B \cong \angle X$
 $\angle A \cong \angle Y$ 2. Converse of the
Alternate Interior
Angles Theorem.
then alt. int.
 \angle s are \cong .3. \overline{AY} bisects \overline{XB} .

3. Given

4. $\overline{JB} \cong \overline{JX}$ 4. Definition of
segment bisector5. $\triangle AJB \cong \triangle YJX$

5. _____

A ASA

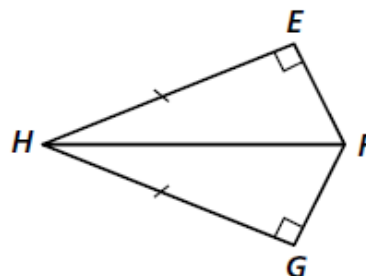
C SAS

B AAS

D SSS

21.

Which congruence statement can be
used to prove that $\triangle EFH \cong \triangle GFH$?



F HL

H SSS

G SAS

J ASA

22.

A triangle has vertices A , B , and C . Which of the following does NOT describe a right, isosceles triangle?

F $m\angle B = 90^\circ$ and $m\angle A = m\angle C$

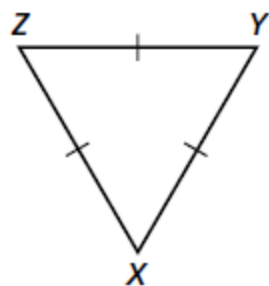
G $m\angle A = 90^\circ$ and $AB = AC$

H $AB = AC$ and $m\angle A = 45^\circ$

J $AB = AC$ and $m\angle B = 45^\circ$

23.

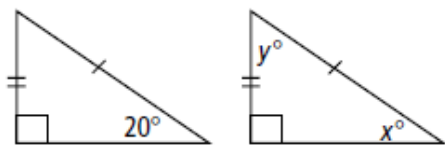
What is the best description of the triangle shown in the figure below?



- A right
B isosceles
C equilateral
D scalene

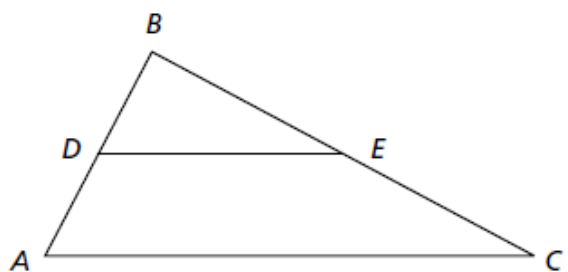
24.

The sails of two boats are pictured below. What is the value of y ?



- A 20
B 60
C 70
D 90

25.

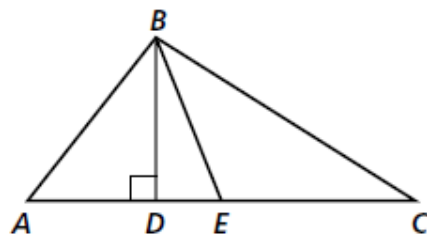


If you know that $\overline{DE} \parallel \overline{AC}$, and that D and E are midpoints, which of the following guarantees that $AC = 2DE$?

- A Triangle Midsegment Theorem
B Median-Altitude Theorem
C CPCTC
D Definition of triangle bisector

26.

Which segment is the altitude of the largest triangle in the diagram?

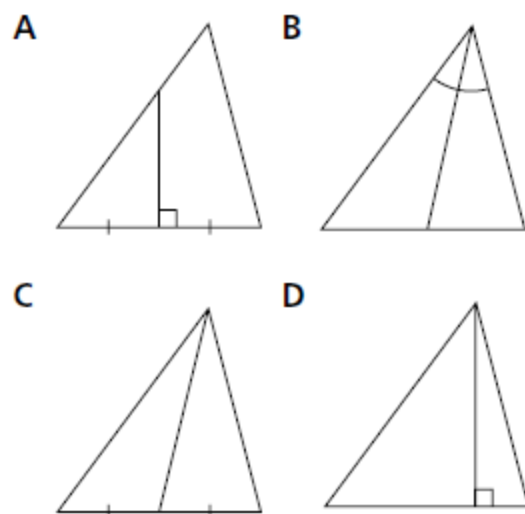


$$\overline{AE} \cong \overline{EC}$$

- F \overline{AD}
G \overline{DC}
H \overline{BE}
J \overline{BD}

27.

Which of the following is an illustration of an angle bisector?



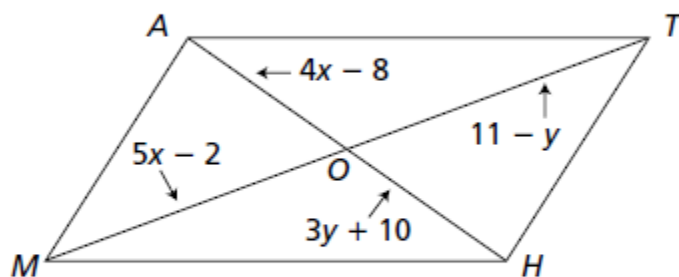
28.

What is the point of concurrency of the altitudes of a triangle?

- A circumcenter
- B incenter
- C orthocenter
- D centroid

29.

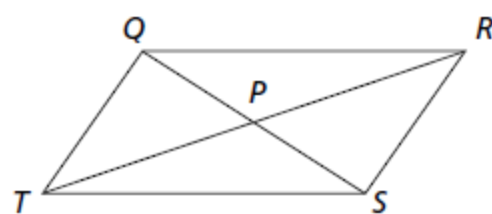
21. The diagonals of parallelogram $MATH$ bisect each other. What is the length of \overline{OH} ?



- A -2
- B 3
- C 4
- D 13

30.

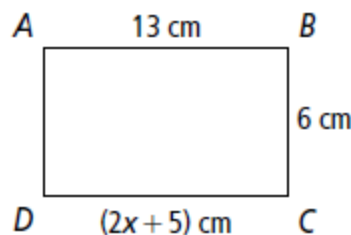
Which of the following would prove that quadrilateral $QRST$ is a parallelogram?



- F $\overline{QR} \cong \overline{ST}$
- G $\overline{QR} \parallel \overline{ST}$
- H $\overline{QP} \cong \overline{PS}$ and $\overline{TP} \cong \overline{PR}$
- J Two pairs of sides are congruent.

31.

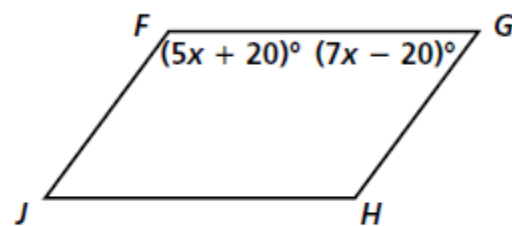
If $ABCD$ is a parallelogram, then what is the value of x ?



- A 4
- B 6
- C 8
- D 13

32.

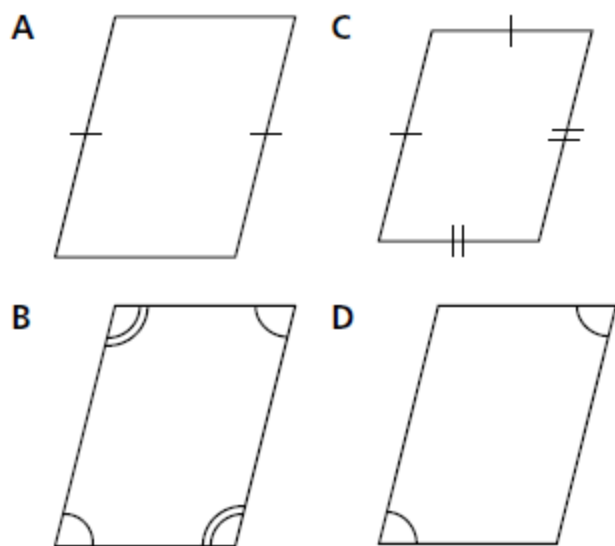
Find the value of x in parallelogram $FGHJ$.



- F 5
- G 10
- H 15
- J 20

33.

Which quadrilateral must be a parallelogram?



34.

Which is the most specific name for a quadrilateral with four congruent sides?

- F square
- G rhombus
- H rectangle
- J parallelogram

35.

Quadrilateral $JKLM$ has four congruent sides and four congruent angles. What is $m\angle JKL$?

- A 45°
- B 60°
- C 90°
- D 180°

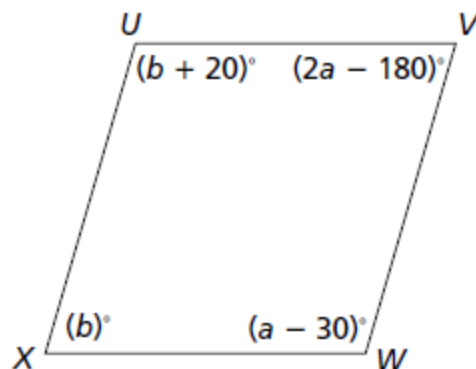
36.

Which of the following statements is NOT true?

- F The diagonals of a rhombus are perpendicular to each other.
- G The diagonals of a kite are perpendicular to each other.
- H The diagonals of a kite bisect each other.
- J The diagonals of a parallelogram bisect each other.

37.

Quadrilateral $UVWX$ is a rhombus. What is the value of b ?



- A 60
- B 80
- C 100
- D 130

38.

The coordinates of three vertices of a parallelogram are $(0, 0)$, $(8, 5)$, and $(15, 7)$. Which of the following is not a possible fourth vertex?

- F $(-7, -2)$
- G $(-3, -8)$
- H $(23, 12)$
- J $(7, 2)$

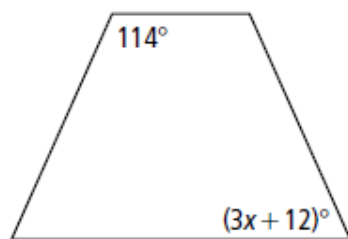
39.

Quadrilateral $JKLM$ has vertices $J(-4, -1)$, $K(-1, 2)$, and $L(6, 2)$. For what coordinates of point M is $JKLM$ a parallelogram?

- A $(3, -2)$
- B $(3, -1)$
- C $(4, 0)$
- D $(4, -1)$

40.

What is the value of x that makes the shape an isosceles trapezoid?



- A 16
- B 18
- C 22
- D 66